

Cofield, Hobbs Give Papers At SNT Meet

Attend Penetrating Radiation Session

Two technical papers will be presented by Y-12ers this week at the 27th National Fall Convention of the Society for Nondestructive Testing. The convention is being held in Cleveland, Ohio, and the papers will be delivered today, Wednesday, October 18.

Robert A. Hobbs will be delivering a paper entitled "A Hand Probe Beta Backscatter Gauge for Radioactive Materials." His discussion concerns a beta radiation backscatter gauging system, including a miniature probe head suitable for hand-held use, which has been developed. The system is used for nondestructive measurements, especially of coating thicknesses on radioactive and other test objects.

The second paper, being delivered by R. E. Cofield, is entitled "Tangential Radiography for Dimension Measurements." The paper was co-authored by Cofield and S. G. Snow. It describes X-ray radiographic techniques of measuring the thickness of walls of structures when the surfaces are not accessible.

Both papers are being presented at the Penetrating Radiation Session of the SNT Convention. All of the authors are in the Testing Development Section of the Y-12 Development Division's Laboratory Development Department.

Thermonuclear's Beasley Is Seminar Speaker

Dr. C. O. Beasley, Jr., physicist in the Thermonuclear Division, just returned from a year's leave-of-absence spent at Culham Laboratory, England, will lead this week's seminar. His subject will be "Some Remarks on Absolute and Convective Ion-Cyclotron Instabilities."

The seminar is set for Thursday, October 19, at 9 a.m. in the TD Conference Room, Building 9201-2.

Ocean Systems Set New Diving Record

Ocean Systems and Esso Production Research recently made the deepest and longest underwater saturation dive on record. During the descent, made in the Gulf of Mexico 40 miles off Grand Isle, Louisiana, two divers performed maintenance work on an underwater wellhead-system at a depth of 636 feet. The tests were made to determine diver proficiency in performing underwater work at great depths. For the project, Ocean Systems' divers first descended to the 636-foot depth in a submersible diving chamber. At the bottom, they left the chamber and performed their work assignment. Physical and physiological data was electrically monitored and recorded. Underwater television cameras were also used to record the project on video-tape. Esso Production Research is an affiliate of Humble Oil and Refining Company. Ocean Systems is an affiliate of Union Carbide and General Precision Equipment Corporation.

Camera Club Announces September Top-Notchers

November competition in the Carbide Camera Club is announced as "Impressionism, Symbolism and Surrealism."

Deadline for entries is Monday, November 6.

September winners in the "Travel" competition were Bill Harper, first; and Peggy Turner, second and third in color prints. In color slides it was A. A. Abbatello taking both first and second place . . . Bill Harper and Bob Stone tying for third. No entries were received in the black and white print category.

There Are Two Seas . . .

A Parable by Bruce Barton

There are two seas in Palestine. One is fresh, and fish are in it. Splashes of green adorn its banks. Trees spread their branches over it, and stretch out their thirsty roots to dip of its healing water. Along its shore the children play.

The River Jordan makes this sea with sparkling water from the hills. So it laughs in the sunshine. And men build their houses near to it, and birds their nests; and every kind of life is happier because it is there.

The River Jordan flows on south into another sea. Here is no splash of fish, no fluttering leaf, no song of birds, no children's laughter. Travellers choose another route, unless on urgent business. The air hangs above its waters and neither man nor beast nor fowl will drink. What makes this mighty difference in these neighbor seas? Not the River Jordan. It empties the same good water into both. Not the soil in which they lie; not the country round about.

This is the difference. The Sea of Galilee receives but does not keep the Jordan. For every drop that flows into it another drop flows out. The giving and receiving go on in equal measure. The other sea is shrewder, hoarding its income jealously. It will not be tempted into any generous impulse. Every drop it gets, it keeps. The Sea of Galilee gives and lives. This other sea gives nothing. It is named the Dead.

There are two seas in Palestine.

There are two kinds of people in the world.

Which kind are we?



One Gift Works Many Wonders

Tool-Setting System Is Designed Here

A noncontact tool-setting system for use on conventional or numerically - controlled turning machine has been developed in Y-12.

The new system enables a machine operator to position automatically a cutting tool in relation to a work piece and thereby eliminate the time-consuming and sometimes erratic manual alignment. The method also serves to protect a fragile or precisely-contoured tool tip from damage that can occur during manual alignment.

The system utilizes a spark established between a probe or tool-setting station and the cutting edge of the tool. This spark-gap current changes with distance, increasing as distance between the tool and problem decreases. The electrical resistance allows a point to be established as a repeatable gap for tool positioning.

Relatively inexpensive, the system can be installed on a machine tool for approximately \$1,000.

Tests conducted by Union Carbide tool engineers in Y-12 indicate that the noncontact, spark-gap system also appears feasible for inspecting finished work pieces.

A published technical report describing the system is available for purchase from the Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U.S. Department of Commerce, Springfield, Virginia, 22151. The title of the report is Y-1589, "A Spark-Gap Tool-Setting System," written by Y-12er Charles Asmanes.

Boston U's Hoy Is Guest Physics Speaker

G. Hoy, Boston University, is this week's Physics Division seminar guest. His subject will be "Magnetically Induced Quadrupole Interaction in Cubic Material."

The seminar is set for Friday, October 20, at 3:15 p.m. in the East Auditorium of ORNL's 4500 building.

Over 50? Watch Those Injuring Falls!!!

Are you in the over-50 age group? Falls account for more injuries in this age group than any other cause. With more and more folks passing the half-century mark, its high time we got the low-down on falls.

Watch greasy floors. Use the handrails at the stairwell.

Avoid slippery rugs in the home.

In other words, watch your step! It could mean a painful injury.

SCHOOL ZONES

Speed must be reduced in school areas. The signs clearly mark the maximum speed if it says 15 miles per hour, that's what it means.



ANOTHER PATENT APPLICATION was recognized recently in the Development Division as C. R. Schmitt, center, was granted a patent application for his development "Low Temperature Polymerization of Furfuryl Alcohol and Foam Product." He is presented his congratulatory letter by J. M. Schreyer, Chemistry Development; as H. T. Kite, right, looks on.

SAFETY SCOREBOARD

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The Bulletin

Published Weekly For The
Y-12 Employees Of
UNION CARBIDE
CORPORATION



NUCLEAR DIVISION

JAMES A. YOUNG Editor



American Association Industrial Editors

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Junior Playhouse Schedule Given

The Junior Playhouse announces its 1967-68 season with four big productions. On Friday, October 27, "Young Mark Twain" will be presented. The professional musical is a story of the famous writer's early days as a young river boat pilot.

"THE RED SHOES" the classic story of the magic dancing shoes, will be presented December 8 and 9. "HANS BRINKER" is set for March 3 . . . and Shakespeare's great comedy "A MID-SUMMER NIGHT'S DREAM" is scheduled for March 30 and 31.

Season memberships are now being sold. Single memberships are \$2 . . . and family memberships (for four) are \$6. Patronships are \$6. Individual tickets are 60 cents at the door. A specific performance time has been encircled on all Junior Playhouse membership tickets in an attempt to insure seating for all ticket-holders during the coming season. Groups of 10 or more (Scouts, Campfire, Birthday parties, etc.) will be given special discount rates.

School of Stagecraft is open to all Junior Playhouse members 11 years or older. Learn about costumes, props, set construction, set painting, make-up, lights and sound.

Junior Playhouse is live theatre for and by local children and everyone is welcome.

'Streetcar' Stars Will Be Chosen

Is there an aspiring Uta Hagen, Vivien Leigh or Jessica Tandy in Y-12? Try-outs for Tennessee Williams' classic "A Streetcar Named Desire" will be held next Monday, October 23, at the Playhouse in Jackson Square beginning at 7:30 p.m. (Or if you prefer you can read for Stella's part . . . Blanche DuBois' sister in the drama.)

Or if you're a man you can go for Stanley, the brother-in-law role made famous by Marlon Brando . . . or Mitch his friend, and sometimes suitor to Blanche. Other roles include Stanley's poker-playing group, some neighborhood women, and a doctor and a nurse.

Anyone interested in reading for the play is invited to attend. Director Paul Ebert emphasizes that previous theatrical experience is not necessary.

"Streetcar" is set to open Friday, January 19.

A CASE OF WONDER

Early to bed and early to rise, and your neighbors will wonder what you're up to!



Mr. and Mrs.
Thomas Dennis Meadows



Mrs. Daniel Luther Scott
SCOTT—SERGEANT

Miss Emilie Sue Sergeant and Mr. Daniel Luther Scott were united in marriage Sunday, September 10, at the Central Baptist Church, Oak Ridge. Dr. Carroll Hubbard officiated at the double ring ceremony.

The bride is the daughter of Mr. and Mrs. O. K. Sergeant, 201 South Purdue Avenue, Oak Ridge; and the groom is the son of Mr. and Mrs. Ray W. Scott Sr., Montgomery, Alabama. (The bride's father is in Y-12's Alpha One Machine Shops, and her brother O. K., Jr., is in Numerical Control.)

The bride, given in marriage by her father, wore a formal gown (designed and made by the bride and her mother) of delustered satin covered with a lace redingote with bell sleeves. The detachable lace train flowed from the shoulders. Her veil was of silk illusion held by satin petals and roses embellished with seed pearls. She carried a white orchid surrounded with snowball mums. Maid-of-honor was Mrs. R. N.

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MEADOWS—JOHNSON

Miss Phyllis Ann Johnson and Mr. Thomas Dennis Meadows exchanged wedding vows Thursday, September 14. The rites were conducted at 7 p.m. at Trinity Methodist Church, with the Reverend Charles W. Dye officiating.

The bride is the daughter of Mr. and Mrs. Earl H. Johnson, 101 Kentucky Avenue, Oak Ridge. The father is in Y-12's General Expediting and Auxiliary Services. The groom is the son of Mr. and Mrs. Halstead Meadows, 136 Maryville Circle, Oak Ridge. The father is in Y-12's 9215 Rolling Mill.

Given in marriage by her father, Mrs. Meadows wore a street length Empire style gown of white bridal satin styled with a short train. The bodice front was trimmed with Chantilly lace, the same materials making up the full length sleeves. She carried white gladioli and tropicana posies.

Mary Manges, Cleveland, Tennessee, was maid-of-honor.

The father of the groom acted as his son's best man. Ushers were Halstead Meadows Jr., Etowah, brother of the groom; and Johnny Watts, Kingston.

Both the bride and groom are graduates of the Oak Ridge High School. The bride was representative to Girls State and Girls Nation, president of the Penguin Club, and is now attending the University of Tennessee School of Nursing.

The groom attended Tennessee Technological University, Cookeville; and the University of Tennessee. He is presently with the Armed Forces, a private first class with the U. S. Army. He left for Southeast Asia September 29, and plans to return to U.T. to complete his studies when his tour of duty is over in Vietnam.

A reception honored the couple at the church immediately after the rites. Assisting in serving were Mrs. Frank Finch, Oak Ridge; Mrs. Johnny A. Watts, Kingston; and Mrs. Halstead Meadows, Etowah.

Benjamin; and bridesmaids were Linda Clifford and Bonnie Vinson, Russellville, Alabama.

Ray W. Scott Sr. acted as his son's best man, and ushers were O. K. Sergeant Jr., brother of the bride, and Ray Scott Jr., brother of the groom, Montgomery, Alabama.

Nuptial music was provided by Mrs. Charles Butler on the organ and vocals by Mrs. Thomas P. Hamrick.

Following the ceremony, the couple was honored by a reception in the church. Assisting in serving were Mrs. William D. Brannon, sister of the bride, Mrs. Ray Scott Jr., sister-in-law of the groom, Mrs. J. L. Breedlove, Mrs. John O'Connor, Mrs. Jacob Neufeld, Mrs. Roy Ditmore, Mrs. D. G. Hill, Mrs. George W. Mitchell, and Tena Scott attending the guestbook.

After the reception the couple left on a wedding trip to Fontana Village. They will make their home at 409 North Popular Street, Florence, Alabama, where the bride is employed with the Muscle Shoals Credit Bureau and the groom will continue his studies at Florence State College.

Don't blare out everything you know.



Y-12ERS LOUISE AND WILLIAM WARMLEY recently took an extended vacation along the Eastern Seaboard, taking in sights along the way. Above they are photographed on the American side of Niagara Falls.

New Atom Book On Space Is Out

How a nuclear rocket works, why it may sometimes be superior to conventional chemically fueled engines and its proposed uses are explained in "Nuclear Propulsion for Space," just published by the U.S. Atomic Energy Commission.

This new booklet, one of the AEC's "Understanding the Atom" series, was written by veteran nuclear science writer William R. Corliss. Corliss has written five other booklets for the AEC in this same series.

In the "Nuclear Propulsion for Space" booklet, Dr. Glenn T. Seaborg, AEC Chairman, summarizes today's nuclear rocket program as an attempt "to make a flyable reactor, not much bigger than an office desk, that will produce the power of Hoover Dam from a cold start in a matter of minutes."

The booklet explains how a nuclear rocket works and describes the joint efforts of the AEC and National Aeronautics and Space Administration on the NERVA (Nuclear Engine for Rocket Vehicle Application) Project. One promising mission described in the booklet is the manned Mars landing projected for the 1980's which may test the talents of the NERVA engine.

To help the layman along the technical trail of rocketry, the 54-page booklet includes numerous photographs, cutaway illustrations, diagrams, a glossary of acronyms and code names, and a chronology of rocket and reactor technology.

Single copies of the booklet and others in the "Understanding the Atom" series are available free by writing the U.S. Atomic Energy Commission, P. O. Box 62, Oak Ridge, Tennessee 37830.



"Somehow I have the feeling that the inspector from waste control is watching us."

Y-12 Couple Enjoy USA Tour

'Discover America' the poster reads. So William and Louise Warmley, Maintenance Division, decided to take a late Summer vacation and tour the eastern section of the U.S.A.

Washington, D. C. was the first stop-off where the pair visited shrines and places of historical interest to all Americans. The White House tour, and a quiet visit to the grave of John F. Kennedy, highlighted the visit here.

From the nation's capital the Warmleys motored to Buffalo and Niagara Falls, where they saw the Niagara Power Project, one of the largest generating projects in the Western World.

From Niagara, they went to Cleveland, Columbus and Dayton, Ohio, enjoying visits with friends and relatives along the way. Louise says they bowled some, both with old and new friends.

'One of the nicest vacations we ever had,' Mrs. Warmley stated. She heartily recommends tours of this nature to fellow Y-12ers. 'A glimpse of some of our heritage in Washington makes you appreciate this country more,' she stated.



The 'sweet sights of October' are now highlighted by the color of Autumn at its height. Marking special days also are several Y-12ers celebrating important landmarks with Union Carbide Corporation. Congratulations.

20 YEARS

Charles A. Trotman, Electrical Engineering, October 20.

Homer D. Baker, Utilities Administration, October 24.

15 YEARS

John T. Parker, General Weld Shop, October 20.

William J. Rutherford, Production Scheduling, October 20.

Charles C. Dinkins, H-1 Foundry, October 22.

Bobbie L. Mowell, Process Maintenance, October 23.

10 YEARS

Robert B. Burditt, Metallurgical Development, October 21.

Ralph Marcum, A-2 Shops, 9212, October 21.

Joseph R. Ryan Jr., G-3 Processing, October 21.

Kenneth S. Whitehouse, Alpha Five Machine Shop, October 21.



MISS NANCY FERRELL was crowned football queen recently at Castle Heights Military Academy during Homecoming Day ceremonies. She was escorted by Cadet Alan Stephens, a starting end on the Castle Heights team. Nancy is the daughter of Mr. and Mrs. George Ferrell, Lenoir City (her father is in Y-12's 9215 Rolling Mill). Cadet Stephens is the son of Mrs. Marjorie Stephens, in the Computing Center at ORGDP.

Wyatt, Norris, Allen Lead Table Tennis

In the X Ping Pong League, Lloyd Wyatt took two sets from Geoff Newman . . . and Roy Huddleston defeated Bill Motley for two.

X League standings:

Player	W	L
Lloyd Wyatt	5	1
Roy Huddleston	2	1
Geoff Newman	1	2
Bill Motley	0	3
Herve Derrien	0	3

In the Y League, Al Norris downed Paul Kasten for three . . . Gordon Brewer defeated Francois Kertesz two.

Y League standings:

Player	W	L
Al Norris	6	0
Gordon Brewer	5	1
Francois Kertesz	1	2
Art Weinberger	0	3
Paul Kasten	0	3
Fred Wetzel	0	3

Dave Allen defeated Winfred Collins in a previously reported match in the Z League.

Z League standings:

Player	W	L
Dave Allen	2	1
Winfred Collins	1	2

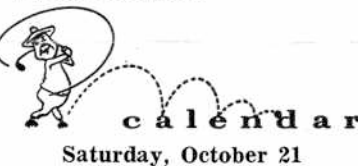
'Hunters Sight-In' Is Set Saturday At ORSA

A 'hunters sight-in' will be held Saturdays, October 21 and 28 at the Oak Ridge Sportsmen's Association Range . . . from 10 a.m. until 3 p.m. Assistants will be available for help in adjustments, etc.

The ORSA-National Rifle Association 'sight-in' involves a \$1 fee for non-members. All hunters are welcome.

It's a good time to get that gun checked out to see that it is shooting true.

Recreation



TURKEY SHOOT: 10 a.m., Oak Ridge Sportsmen's Association range. All Y-12ers welcome. 25¢ a shot . . . 40 relays.

Monday, October 23

BOWLING: 5:45 p.m. C League, Ark Lanes.

TABLE TENNIS: 7 p.m. Oak Ridge Wildcat's Den.

Tuesday, October 24

PHYSICAL FITNESS: 7:30 p.m. Oak Ridge High School Gym.

Wednesday, October 25

CARBIDE RIFLE LEAGUE: 7 p.m., Clinton Rifle Range.

BOWLING: Mixed League, 8 p.m., Ark Lanes.

Thursday, October 26

BOWLING: Classic League, 5:45 p.m., Ark Lanes.

PHYSICAL FITNESS: 7:30 p.m., Oak Ridge High School Gym.

A GIRL LIKE YOU

Zelma described her occupation as an 'exotic dancer.' What she really was, however, was a stripper. Said she barely made a living!

Security must be a daily concern.

Has Beens Again Lead Classic Race

The Has Beens are again the "Are Nows" in the Classic Bowling League . . . with a one and one-half point lead out front . . . thanks to a three point win over the Swingsters. Two four point victories went to teams . . . as the All Stars stamped the Screwballs and the Eightballs belted the Eagles.

Other three point wins went to the Markers over the Bumpers, the Pinbusters past the Rippers, the Splinters superior to the Rebels and the Smelters over the Tigers. The Cubs and Playboys shared two.

Tom Hillard, Markers, marked a 245 single scratch game, boosted to a 266 handicap single. Jack Spears, Rebels, scored a 605 scratch series, 668 handicap.

The Has Beens and Markers tied for single scratch honors . . . both with 964. The Markers handicap singles of 1103 were high. The Has Beens had high series of 2695 scratch, 3022 handicap.

League standings follow:

Team	W	L
Has Beens	18	6
Bumpers	16½	7½
Rebels	16	8
Markers	15	9
Swingsters	14	10
All Stars	14	10
Tigers	13	11
Pinbusters	12	12
Eightballs	12	12
Splinters	11	13
Smelters	11	13
Cubs	10½	13½
Playboys	10	14
Rippers	9	15
Eagles	6	18
Screwballs	4	20

Coley-Raper Take Horseshoe Crown

Final action in the Horseshoe League last week gave the crown in the final half to Y-12ers E. L. Coley and Harrison Raper. Coley-Raper took the first round of play, and thus become the league champs.

October 12 matches saw Durham-Harness post six points over Luckett and Barger . . . to come within one point of the big top. Coley-Raper took eight from Helms-Lucke and Gray-Leonard posted nine at the expense of Rein-Case.

Matheny-Miller grabbed seven points from Hutto-Tillery.

Final standings follow:

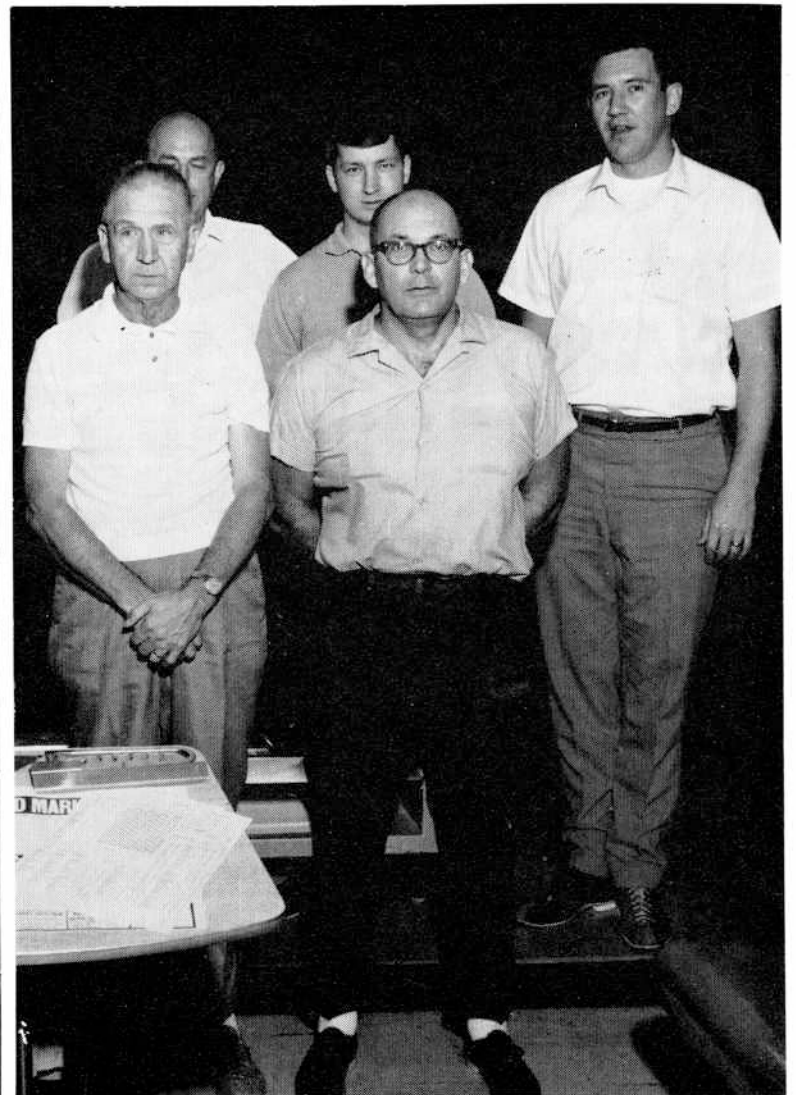
Team	W	L
Coley-Raper, Y-12	60	12
Durham-Harness, ORNL	59	13
Luckett-Barger, ORNL	54	18
Gray-Leonard, ORNL	42	30
Matheny-Miller, ORNL	37	35
Rein-Case, ORNL	28	44
Helms-Lucke, Y-12	26	46
Hutto-Tillery, ORNL	16	56

Pistol Course Is Offered At ORSA

A basic pistol marksmanship course is to be offered under the sponsorship of the Oak Ridge Sportsmen's Association. The course will consist of six two-hour classes held at the ORSA indoor range at 6:30 p.m. on consecutive Tuesdays, beginning next Tuesday, October 24, and ending November 28. If necessary, an additional make-up class will meet on December 5.

The fee for non-ORSA members is \$2. This course is designed for beginners, both men and women. It will emphasize handgun safety and be under the supervision of an NRA-certified pistol instructor. Enrollment is limited to 20 students; enrollees must be age 16 or older. Pistols of .22 caliber will be available for those who do not own one.

For additional information or reservations, telephone Vernon Raaen, extension 3-6973, or home phone Oak Ridge 483-5767.



THE PARBUSTERS POSE big competition for all comers in C Bowling circles. In front are, from left, Roy Roberts and Paul Trebilcox . . . in the rear are Spence Wallace (partially hidden), Tim Butler and Capt. L. K. Brooks.

Roses 'N Thorns Win Big In Mixed

The Roses 'N Thorns took a giant step toward the top of the Mixed Bowling League last week by downing the Hits & Misses for four points. Taking three it was the Alley Cats over the Rollers and the Mustangs over the McSprays. The Goofers and Twisters shared two.

Joyce Gillihan, Rollers, posted high women's singles with a 163 . . . 210 handicap game. Peg Dickens, subbing on the McSprays team, rolled a 455 scratch, 555 handicap series.

C. R. Lively, Rollers; Steve Pintur, Alley Cats, both posted a 197 scratch single . . . Pintur's 238 handicap game was high. Steve went the rest of the way by taking series highs . . . 534 scratch, 657 handicap.

The Goofers gained top honors in singles . . . 636 scratch, 798 handicap . . . while the Mustangs put a 1784 scratch series on the peg . . . and the Alley Cats aced a 2263 handicap series.

League standings follow:

Team	W	L
Hits & Misses	17	7
Roses 'N Thorns	14	10
Alley Cats	13	11
Mustangs	12	12
Goofers	12	12
McSprays	11	13
Rollers	11	13
Twisters	6	18

NO SMOKING

A couple of industries in Rhode Island have come up with sugar-coated plans to discourage employees from smoking. Aside from better health, the lures range from weekly cash bonuses to a chance at a free trip to Bermuda. The companies hope to eliminate time wasted in smoking, help clear the air in the plants, and mainly to keep their men on the job healthy for longer periods of time.

Plug security leaks.

Badgers Break Into C Alley Top

The Badgers barged out in front in the C League alley-action last week, by downing the Rounders for the big count. Also taking four and moving into second place was the Fireballs, downing the Royal Flush for four. Also taking sweeps it was the Rollmasters over the Big Five, the Sunflowers over the King Pins and the HiLifers higher than the Parbusters.

The only three-point win of the week went to the Rodders over the Invalids.

T. S. Burnette, Rodders, rolled a 221 scratch game. Tom Pappas, Badgers, put a 247 handicap single on the records . . . Dick Huber, Badgers, collected a 561 scratch series . . . and Frank Adams, HiLifers, rolled a 643 handicap series.

The HiLifers were highest on singles . . . 888 scratch, 1062 handicap. The Badgers were best in scratch series count with 2501. The HiLifers returned to the boards with a 2936 handicap series.

League standings follow:

Team	W	L
Badgers	15	5
Fireballs	14	6
Rollmasters	12	8
Rodders	12	8
Sunflowers	12	8
Big Five	11	9
Royal Flush	10	10
HiLifers	9	11
King Pins	8	12
Rounders	7	13
Parbusters	6	14
Invalids	4	16

Golf Play-Off Score Corrected For Record

An error was noted in the final golf score given in the Huddleston-Garber, Hogg-Huffman play-off. Huffman's actual score was 46 scratch, 42 handicap . . . and the total score of the duo was 78 handicap . . . only two strokes under Joel Garber and Roy Huddleston's card.

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'Atom' Series Books Popular At Open House

"Understanding the Atom," the Atomic Energy Commission's series of books, designed to keep the public abreast of continuing research into peaceful applications of nuclear energy, got a lot of attention at Y-12's Open House, September 2, 3.

A display of "Understanding the Atom" series was seen by several thousands of visitors to the plant in the Oak Ridge 25 Celebration. A total of 827 filled out cards requesting the series . . . Out-of-staters included Ohio, North Carolina, Georgia, Alabama, Illinois, Louisiana and Indiana and Colorado. Also represented were folks from Kentucky, Pennsylvania, Missouri, Virginia, Texas, California, Rhode Island, Florida, New Mexico, and West Virginia.

Two visitors from out of the country . . . Oxford, England; and Zugerberg, Switzerland also requested the booklets.

The most requests came from Knoxville, with 276 from the neighboring city . . . Oak Ridge, next with 242. Clinton, Maryville, Kingston, Powell, Oliver Springs, Concord, Lenoir City, Lake City, Rockwood, Harriman, Alcoa, Briceville, Riceville, LaFollette, Sparta, Mascot, Morristown, Lansing, Bristol, Corryton, Chattanooga, Gallatin, Luttrell, Portland and Louisville came up with multiple-requests.

Single residents from Wartburg, Andersonville, Normandy, Heiskell, Friendsville, Crossville, Spring City, Tazewell, Gatlinburg, Townsend, Johnson City, Athens, Clairfield, Cleveland, Dyersburg, Erwin, Sweetwater, Jefferson City, Surgoinsville, Nashville, Memphis, Bulls Gap, also came up for the series.

So, you can see, visitors in the plant came from all over.

The "Atom" series of booklets are available free on request from the AEC in Oak Ridge. All of the booklets are written in lay language we can all understand.

LAUGHING LAST

They used to laugh when I sat down at the piano . . . now they throw things. They also once laughed at Watt, until he invented the Watt Schmacallit.

tion's bionic laboratory in California. Artificial neurons are electronic parts that imitate the electrical properties of nerve cells.

Building A 'Brain'

Building an electro-chemical brain will be discussed by the laboratory's director Robert A. Stewart. Proposed use of the "brain" would be control of a National Aeronautic and Space Administration experimental robot which presently can be instructed to perform basic human movements.

Research to uncover the secrets of pigeon navigation and porpoise sonar, both more precise than any systems developed by man, will be seen and explained.

"The 21st Century" is produced by CBS News. Burton Benjamin is Executive Producer, and Isaac Kleinerman, producer. "Bats, Birds and Bionics" was written by Richard Slote.

YOU HELP MORE
THE UNITED WAY



A PROUD grandparent is John E. Llewellyn, Utilities. He was presented a grandson August 17 at Baptist Hospital. Jonathan weighed seven pounds, three ounces, and is the son of Robert L. and Brenda J. Llewellyn.

Union Carbide Is In Quest Of New Food

Union Carbide's new research program is in quest for food for a growing world. Research is going on to seek new technologies to make existing, but not fully used, plant proteins available and palatable for human consumption. The new project, a continuation of the Corporation's pioneer work in food technology, will be under the direction of Dr. Daniel Rosenfield, formerly with the State Department's Foreign Aid — Food Nutrition Program. The Corporation has also set up, through its South African subsidiary, an agricultural experimental station in Africa to learn more about its reverse growing season and the different crops, soils, and pests that exist in that area.

Think before you talk.



Ride wanted from 112 East Hunter Circle to Central or West Portal, straight day. Lynn Eason, plant phone 3-5434, home phone Oak Ridge 483-0369.

Ride wanted from Norris Freeway (near 441 & 61 intersection) 1 mile south of Norris, to Biology or North Portal, straight day. Faye Grantham, plant phone 3-7266, home phone Norris 7144.

Ride wanted from Northside Drive (Norwood Area), Knoxville, to West Portal, straight day. Jim Costner, plant phone 3-7161, home phone Knoxville 687-6633.

Ride wanted from Pallas Road, off Pennsylvania, to West Portal, straight day. Lucy Parker, plant phone 3-5005, home phone Oak Ridge 682-2619.

Ride wanted from 678 West Outer Drive, Oak Ridge, to North Portal, straight day. Etta Jean Smith, plant phone 3-7147, home phone Oak Ridge 483-6446.

Car pool member wanted from Norwood Area, Knoxville, to Central or North Portal, straight day. Eugene Keith, plant phone 3-5606, home phone Knoxville 689-2229.

Ride wanted from West First Street, Lenoir City, to North Portal, straight day. Plant phone 3-5048, home phone Lenoir City 986-5423.

WHAT IS A PAPER?

A newspaper has been described as "a journal to expose the faults of the world and the typographical errors of the staff."

The brain is a wonderful organ. It starts working the moment you get up in the morning and does not stop until you get to the office.

BAT BRAIN—AN IMITATION of the bat's micro-miniature radar set is demonstrated by its inventor, Dr. John Dupress for the "21st Century" report, "Bats, Birds and Bionics," set for Sunday, October 22, at 6 p.m. over WBIR-TV, Channel 10. Bionics is the exciting new science which applies biology to electronics. The "bat radar" set weighs four pounds in contrast to the bat's few hundredths of an ounce brain. Dr. Dupress, who lost his sight in World War II, is director of the Massachusetts Institute of Technology Center for Sensory Aids and Evaluation. "The 21st Century" is sponsored by Union Carbide Corporation.

'Bats, Birds And Bionics' Exciting Subject Of 21st Century Show Sunday

The exciting new science of bionics—simply put, the application of biology to electronics—will be examined on "The 21st Century" report on "Bats, Birds and Bionics," Sunday, October 22, at 6 p.m. in color over WBIR-TV, Channel 10. CBS News Correspondent Walter Cronkite is principal reporter for the series, sponsored by Union Carbide Corporation.

This new science form, largely theoretical today, already promises new guidance systems for the blind using the principals of one of nature's most precise navigational systems, "bat radar."

A crude imitation of the bat's micro-miniature radar set is demonstrated by electronic pathfinder inventor Dr. John Dupress. It weighs four pounds in contrast to the bat's few hundredths of an ounce brain. Dr. Dupress, who lost his sight in World War II, is director of the Massachusetts Institute of Technology's Center for Sensory Aids and Evaluation.

Birds In Flight

New ideas for aerodynamic research have been inspired by observation of bats and birds in flight. A combination folding wing and parachute engineered on the same principles as bat wings will be seen in test flights. It may enable astronauts to make soft landings on earth when they return from space. High performance aircraft will be seen demonstrating flexible wings inspired by birds.

Bionic equipment that may

someday actually perform as highly efficient map-readers, librarians, or robot astronauts will be seen in various stages of planning and development at bionic research laboratories.

Building generalized characteristics of human intelligence into bionic machines will be discussed by Professor Heinz von Foerster of the University of Illinois. He will illustrate his remarks with a demonstration of a bionic machine which can recognize and count a series of objects of varying shapes.

Computer That Flies

A bionic computer that "learns" by experience is demonstrated in a flight simulator at Wright-Patterson Air Force Base. With man and machine sharing the controls the computer learns to fly by monitoring the performance of the human pilot. The computer's electronic components work faster than the human pilot. In a situation where the "airplane's" control system fails and normal controls are reversed—stick back and nose down instead of up—the pilot corrects by pulling the stick back farther and drops the nose into a crash dive. The computer senses trouble and teaches itself a new way to handle the controls—all in the millionths of a second necessary to avert a crash.

Production of artificial neurons, a possible revolutionary breakthrough in the development of an electro-chemical brain, will be seen at Space General Corpora-

